### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property **Organization** International Bureau





(43) International Publication Date 29 January 2004 (29.01.2004)

**PCT** 

# (10) International Publication Number WO 2004/010300 A3

(51) International Patent Classification7: G07F 7/10, G06F 1/00

G06F 11/00.

(21) International Application Number:

PCT/IB2003/002847

(22) International Filing Date: 18 July 2003 (18.07.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 02291812.2

18 July 2002 (18.07.2002) EP

- (71) Applicant (for all designated States except US): SCHLUMBERGER SYSTEMES [FR/FR]; 50 Avenue De Jaures, F-92120 Montrouge (FR).
- (71) Applicant (for MC only): SCHLUMBERGER MALCO INC [US/US]; 9800 Reistertown, MD 21117 Owing Mills (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): GIRAUD, Nicolas [FR/FR]; 6 Square De Bretteville, F-78150 Le Chesnay (FR).

- (74) Common Representative: SCHLUMBERGER SYS-TEMES; C/O Patricia RENAULT, 36-38 rue de la Princesse, BP 45, F-78431 Louveciennes (FR).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Declaration under Rule 4.17:

of inventorship (Rule 4.17(iv)) for US only

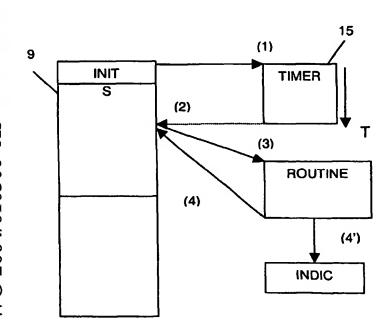
#### Published:

with international search report

(88) Date of publication of the international search report: 25 March 2004

[Continued on next page]

# (54) Title: METHOD TO SECURE THE EXECUTION OF A PROGRAM AGAINST ATTACKS



(57) Abstract: The method according to this invention concerns a method to secure the execution of a program stored in an electronic assembly comprising information processing means and information storage means. The method consists in checking the execution time of at least one sequence in said program with respect to the normal predetermined execution time of said sequence. invention also concerns the electronic module in which said method is implemented and the card comprising said module.







#### 

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



# INTERNATIONAL SEARCH REPORT

International tion No PCT/IB 03/02847

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G06F1/00 G07F7/10 G06F1/00

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 GO6F GO7F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the rele	vant passages	Relevant to claim No.		
х	FR 2 707 409 A (SOLAIC SA) 13 January 1995 (1995-01-13) the whole document		1-3,6,7, 10-12		
X	US 5 892 900 A (GINTER KARL L ET 6 April 1999 (1999-04-06) column 243, line 64 -column 244, figures 69K-N		1,2,5, 10,13		
A	US 2001/016910 A1 (TAKAHASHI MASA AL) 23 August 2001 (2001-08-23) page 6, left-hand column, line 8 56; figure 15		8		
Α	FR 2 795 836 A (BULL CP8) 5 January 2001 (2001-01-05) the whole document	-/	1–12		
X Fur	ther documents are listed in the continuation of box C.	Patent family members are listed	in annex.		
*A* docum consi *E* earlier filing *L* docum which citatic *O* docum other *P* docum	ategories of cited documents:  ent defining the general state of the art which is not dered to be of particular relevance document but published on or after the international date ent which may throw doubts on priority claim(s) or is cited to establish the publication date of another on or other special reason (as specified) ment referring to an oral disclosure, use, exhibition or means ent published prior to the international filing date but than the priority date claimed	or priority date and not in conflict with cited to understand the principle or th invention  "X" document of particular relevance; the cannot be considered novel or cannot involve an inventive step when the de  "Y" document of particular relevance; the cannot be considered to involve an indocument is combined with one or ments, such combination being obvious in the art.	document of particular relevance; the claimed Invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled		
Date of the actual completion of the international search  17 December 2003		Date of mailing of the international search report  05/01/2004			
	mailing address of the ISA  European Patent Office, P.B. 5818 Patentlaan 2  NL – 2280 HV Rijswijk  Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,	Authorized officer			
	Fax: (+31-70) 340-3016	Absalom, R			

# INTERNATIONAL SEARCH REPORT

International attion No
PCT/IB 03/02847

		PCT/IB 03/02847
	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3 723 975 A (KURTZ H ET AL) 27 March 1973 (1973-03-27) claim 1	1,10
Α	US 4 710 613 A (SHIGENAGA YOSHIMI) 1 December 1987 (1987-12-01) abstract	1,10
A	US 3 426 331 A (JOYCE THOMAS F) 4 February 1969 (1969-02-04) claim 1	1,10
	·	

# INTERNATIONAL SEARCH REPORT

Internationa cation No
PCT/IB 03/02847

					, ,	01/10	03/0204/
	atent document I in search report		Publication date		Patent family member(s)		Publication date
FR	2707409	Α	13-01-1995	FR	2707409	A3	13-01-1995
US	5892900	Α	06-04-1999	AU	4170397	A	19-03-1998
				CA	2265473	C	22-10-2002
				CA	2373508	A1	05-03-1998
				CA	2373542	C	12-11-2002
				EP	0922248	A1	16-06-1999
				US	2003191719	A1	09-10-2003
				WO	9809209	A1	05-03-1998
				US	2003163431	A1	28-08-2003
US	2001016910	A1	23-08-2001	JP	2001195555	Α	19-07-2001
				JP	2001266103	Α	28-09-2001
				TW	536672	В	11-06-2003
				US	2001047480	A1	29-11-2001
FR	2795836	Α	05-01-2001	FR	2795836	A1	05-01-2001
US	3723975	Α	27-03-1973	DE	2230119	A1	25-01-1973
				FR	2144222	<b>A5</b>	09-02-1973
				GB	1360566	Α	17-07-1974
				JP	52044495	В	08-11-1977
US	4710613	Α	01-12-1987	JP	1825638		28-02-1994
				JP	5033416		19-05-1993
				JP			27-06-1986
				ΑT	61680		15-03-1991
				CA	1245764		29-11-1988
				DE	3582131	_	18-04-1991
				EΡ	0186038	A2	02-07-1986
				FR	2574963	A1	20-06-1986
us	3426331	Α	04-02-1969	NONE			